

LETTER FROM THE DIRECTOR OF THE UNIVERSITY HONORS PROGRAM

“Learn by doing” isn’t just a motto at Cal Poly. It represents the school’s genuine dedication to this powerful educational philosophy. That is why when the National Science Foundation awarded a \$500,000 grant to the Cal Poly’s Honors Program to fund scholarships for academically-talented students in the fields of science, technology, engineering and mathematics, it did so knowing that the money would help Honors students become engaged in undergraduate research projects in line with this philosophy. The goal of these projects would be to broaden the learning experience of undergraduates by creating interdisciplinary opportunities for research while striving to contribute to the greater good of the community, both locally and globally. The result is this journal, which highlights Honors undergraduate research projects initiated in the 2006-2007 academic year. Many of these projects not only met these goals, but in many ways exceeded them. For this reason, I am very proud to introduce Cal Poly’s first Honors Undergraduate Research Journal.

While the NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) grant provided scholarships to several of the students who participated in the Honors Undergraduate Research Program, institutional funds were given to faculty to support the projects they undertook with the students. I feel it is important to acknowledge all of those who supported this program with matching funds and their enthusiastic leadership. This includes Susan Opava, Dean of Research and Graduate Programs; Mohammad Noori, Dean of the College of Engineering; Phil Bailey, Dean of the College of Science and Mathematics; David Wehner, Dean of the College of Agriculture Food and Environmental Sciences, Linda Halisky, Dean of the College of Liberal Arts; and Ed Sullivan, Associate Dean of the College of Engineering. I would also like to send special thanks to Provost Bill Durgin for his leadership in promoting research at our university.

Participation in the Honors Undergraduate Research Program is open to not only Honors students, but to all students on campus who have a desire to engage in undergraduate research. Those who demonstrate financial need also qualify to receive scholarships from the NSF S-STEM grant. The infrastructure of the Honors Program makes it possible to transcend some of the cross-college challenges that typically emerge in the administration of interdisciplinary efforts as students are matched with the faculty projects. Students participating in the research projects enroll in Honors 200 and Honors 400, and this provides ample opportunities for them to share their research findings with their peers and faculty members coming from various disciplines. In the first year this approach was used, the number of research projects increased from 20 to 34.

I would like to recognize the students and research faculty who participated in this program by submitting and reviewing papers for inclusion in this journal. I would also like to acknowledge all of the faculty mentors who made these research opportunities available for the students. Their time and efforts are evident in the work highlighted in these papers. Without their support, Cal Poly's Honors Undergraduate Research Program would not have been possible.

While this first volume of the Honors Undergraduate Research Journal contains just a small sample of the outstanding undergraduate research that took place last year, I hope it sheds light on what is possible and sparks ideas for even greater endeavors in the future. With the support of the entire Cal Poly community, I am confident that we will continue to build on the success we have seen in this first year of the Honors Undergraduate Research Program.

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